



Listeria Motility Medium

M1215

Listeria Motility Medium is a semisolid medium recommended for testing motility of *Listeria monocytogenes*.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	20.000
Peptic digest of animal tissue	6.100
Agar	3.500
Final pH (at 25°C)	7.3±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 29.6 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Dispense in tubes and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Allow the tubed medium to cool in an upright position.

Principle And Interpretation

Bacterial motility is one of the important determinants in making a final species identification. Bacteria move by means of flagella, the number and location of which vary among different species. Semisolid media in tubes are most commonly employed for detecting motility. Motility media have agar concentration of 0.4% or less. The motility test is interpreted by making a macroscopic examination of medium for a diffused zone of growth flaring out from the line of inoculation. *Listeria monocytogenes* requires room temperature incubation before motility develops, since in some organisms; flagellar proteins develop more rapidly at lower temperatures (room temperature) such as in *L. monocytogenes* and *Yersinia enterocolitica*. Listeria Motility Medium is formulated in accordance with ISO Committee specification (1) for the determination of motility by *L. monocytogenes*.

Casein enzymic hydrolysate and peptic digest of animal tissue act as source of growth nutrients. The motility of *L. monocytogenes* is best demonstrated by stab inoculating two tubes of semisolid medium and incubating one at room temperature (20 - 25°C) and the other at 35°C. Motility is better observed at room temperature (2). An umbrella-like zone of growth 2 to 5 mm below the surface of the medium is characteristic of *L. monocytogenes*. Motility at 35°C incubation is either absent or extremely sluggish.

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Semisolid, comparable with 0.35% Agar gel.

Colour and Clarity of prepared medium

Light yellow coloured, clear to slightly opalescent gel forms in tubes as butts

Reaction

Reaction of 2.96% w/v aqueous solution at 25°C. pH : 7.3±0.2

pH

7.10-7.50

Cultural Response

Cultural characteristics observed after an incubation at room temperature (25-30°C) for 24-48 hours.

Cultural Response

Organism	Inoculum (CFU)	Growth	Motility
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Cultural Response

<i>Listeria monocytogenes</i> ATCC 19117	50-100	luxuriant	positive, growth away from stabline causing turbidity
<i>Listeria monocytogenes</i> ATCC 19111	50-100	luxuriant	positive, growth away from stabline causing turbidity
<i>Listeria monocytogenes</i> ATCC 19112	50-100	luxuriant	positive, growth away from stabline causing turbidity
<i>Staphylococcus aureus</i> ATCC 25923	50-100	luxuriant	negative, growth along the stabline, surrounding medium remains clear

Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label.

Reference

1. International Organization for Standardization (ISO), 1993, Draft ISO/DIS 10560.
2. Bailey and Scotts Diagnostic Microbiology, 1986, 7th Ed., The C.V. Mosby Co., St. Louis.

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